

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference AF-355-6-7		Date of mailing (day/month/year) 05 FEB 2007
International application No. PCT/US05/05714		International filing date (day/month/year) 18 February 2005 (18.02.2005)
International Patent Classification (IPC) or both national classification and IPC IPC: B01D 15/08(2006.01);G01N 30/04(2006.01) USPC: 73/61.59;137/315.27,597;251/215		Priority date (day/month/year) 19 February 2004 (19.02.2004)
Applicant WATERS INVESTMENTS LIMITED		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

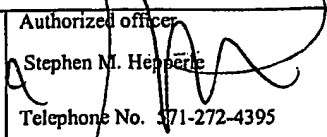
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 19 January 2007 (19.01.2007)	Authorized officer  Stephen M. Heppner Telephone No. 571-272-4395
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE
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International application No.

PCT/US05/05714

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>12, 16-17, 28-31, 35, 41, 47, 50-56</u>	YES
	Claims <u>1-11, 13-15, 18-34, 36-46, 48-61</u>	NO
Inventive step (IS)	Claims <u>16-17, 28-31, 50-56</u>	YES
	Claims <u>1-15, 18-27, 32-49, 57-61</u>	NO
Industrial applicability (IA)	Claims <u>1-61</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-9, 11, 13-15, 18-27, 32-34, 36-41, 44-49 and 57 lack novelty under PCT Article 33(2) as being anticipated by ACHENER et al.

Claims 1, 7, 9-11, 13, 15, 18, 19, 25, 32-35, 37-48 and 58 lack novelty under PCT Article 33(2) as being anticipated by HAMMOCK.

Claims 12, 35, 41 and 47 lack an inventive step under PCT Article 33(3) as being obvious over HAMMOCK. It would not have involved an inventive step to equip HAMMOCK with 6 (two more) valve pins to allow a wider range of flow control. It would not have involved an inventive step to provide the HAMMOCK valves with pneumatic actuators to permit remote control.

Claims 16-17, 28-31 and 50-56 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the pin valve arrangement as claimed with a seal load sleeve, nut seal, two Belleville springs and a load ring, or the particular seal materials claimed.

Claims 1-61 meet the criteria set out in PCT Article 33(4), because the subject matter claimed can be made or used in industry.

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof: the numeral 64 points to the fitting block in Fig. 2, but to the fluid plate in Fig. 1.